

# CHARACTERS OF SOME NEW MUSCI

COLLECTED BY

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IN THE NORTH PACIFIC EXPLORING EXPEDITION,\*

UNDER THE COMMAND OF CAPTAIN JOHN RODGERS, U. S. N.

BY WILLIAM S. SULLIVANT AND LEO LESQUEREUX.

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1. *FISSIDENS LAXUS* (sp. nov.): dioicus, perpusillus, acrocarpus, simplex; foliis 5 – 6-jugis oblongis longius acuminatis costa excurrente cuspidatis laxe areolatis, areolis hexagono-rotundis permagnis; capsula ovali leptodermi.

Hong Kong, China.

2. *FISSIDENS INCRASSATUS* (sp. nov.): dioicus, pusillus, acrocarpus, ramosus; foliis 8 – 10-jugis oblongis lineari-oblongisve subito acumi-

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\* Of the very interesting collection of Mosses brought home by the Expedition, eighty-six were gathered in Japan and adjacent islands, and seven on the coast of China. Of these ninety-three species, the fifty-four following are identical with species occurring either in Europe or in North America, or in both countries:—

*Sphagnum squarrosum*, *Phascum crispum*, *Weisia viridula*, *Rhabloweisia fugax*, *Dicranella curvata*, *Dicranum scoparium*, *Trematodon longicollis*, *Leucobryum glaucum*, *Trichostomum pallidum*, *T. inflexum*, *Barbula unguiculata*, *Ceratodon purpureus*, *Eustichium Norvegicum*, *Orthotrichum fastigiatum*, *Hedwigia ciliata*, *Entosthodon acuminatum*, *E. ericetorum*, *Bryum pyriforme*, *B. nutans*, *B. torques-cens*, *B. pallescens*, *Mnium punctatum*, *Bartramia pomiformis*, *B. fontana*? *Atrichum angustatum*, *Pogonatum aloides*, *P. alpinum*, *Polytrichum juniperinum*, *P. commune*, *Hypnum scitum*, *H. minutulum*, *H. Starkii*, *H. crassinervium*, *H. populeum*, *H. salebrosum*, *H. velutinum*, *H. rutabulum*, *H. serpens* var., *H. adnatum*, *H. denticulatum*, *H. serrulatum*, *H. microcarpum*, *H. brevirostre*, *H. triquetrum*,

natis dense minute areolatis, costa vix excurrente; capsula ovali-oblonga pachydermi; operculo longe rostrato; calyptra dimidiata.

On rocks at Camoens' Grotto, near Macao; also at Hong Kong, China.

3. *FISSIDENS PUNGENS* (sp. nov.): monoicus, acrocarpus, pusillus, simplex; foliis 10–14-jugis anguste linearibus sensim acuminatis, costa sub apice desinente; capsula ovali rostrato-operculata; calyptra anguste conica; floribus masculis axillaribus.

On rocks in shaded ravines, Hong Kong, China.

4. *ORTHOTRICHUM JAPONICUM* (sp. nov.): monoicum, laxe pulvinatum; foliis e basi elongato-lanceolata linearibus; capsula exserta obovata longicolla 8-striata; peristomii duplicis dentibus bigeminatis, ciliis nodoso-articulatis carinatis; calyptra campanulata multoties plicata pilosa.

On trees in shaded ravines, Hakodadi, Japan.

5. *DICRANELLA OBSCURA* (sp. nov.): dioica, dense caespitosa, subsimplex; foliis e basi lanceolata longissime subulatis subsecundis apice dentatis, costa percurrente; capsula ovali-cylindracea microstoma pachydermi; operculo aciculari-rostrato erecto; annulo obscuro; calyptra magna; sporis majusculis.

On steep banks near Hong Kong, China.

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*H. splendens*, *H. Oakesii*, *H. pratense*, *H. Haldanianum*, *H. cupressiforme* var., *H. polymorphum*, *H. cuspidatum*, *Hookeria lucens* var. ? *Anomodon tristis*, *Pylaisaea velutina*.

These species are distributed as follows:—eight occur only in Eastern North America, and six in Europe; two occur in Europe, and in Western North America; seven in Europe and in Eastern and Western North America; and thirty-one are common to both Europe and Eastern North America. Or, in other words, forty are found both in Europe and in North America; of the remaining fourteen, six are restricted to Europe, and eight to North America.

Closely allied to these fifty-four species are the twenty-four Japanese and Chinese species here characterized as new.

From these data it is apparent that the similarity of the bryology of Japan to that of Europe and North America, particularly their Western and Eastern portions respectively, is even greater than that which prevails (as recently shown by Professor Gray's admirable papers on the subject) in the Phænogamous floras of those countries; and indeed, excluding a *Hypopterygium* and a few *Macromitria*,—the latter represented by one species on the Southern Alleghany Mountains,—if all the species of the Japan collection should be found in New England, it would excite no other surprise than that they had so long escaped detection.



6. *PTYCHOMITRIUM WILSONI* (sp. nov.): monoicum, caespitosum; caulibus robustis; foliis confertis lineari-lanceolatis superne margine incrassata serratis, costa sub apice evanida; capsula elongato-ovali microstoma; operculo rectirostro; perist. dentibus subtrifidis hic illic pertusis; calyptra permagna campanulata rostrata plicata basi lobata.

On rocks and hill-sides, Simoda, Japan.

7. *TRICHOSTOMUM TORTULOIDES* (sp. nov.): monoicum, dense caespitans; caulibus brevibus congesto-foliosis; foliis lineari-lanceolatis costa excurrente cuspidatis, marginibus incurvis subundulatis integerimis; capsula cylindracea curvula; perist. dentibus modice contortis inferne nodoso-articulatis; operculo longe rostrato; calyptra longa angusta contorta.

On rocks among hills, near Simon's Town, Cape of Good Hope.

+ 8. *MNIUM FLAGELLARE* (sp. nov.): dioicum; caulibus simplicibus, innovationibus numerosis filiformibus erectis appresso-microphyllis infra perichæt. et perigon. oriundis; foliis caulinis ascendendo majoribus laxis erecto-patentibus oblongis elliptico-oblongisve superne duplicato-serratis dense minute rotundato-areolatis papillois, costa percurrente; paraphysibus subclavatis: fructu non viso.

Rocks, on the summit of mountains, northeast of Hakodadi, Japan.

9. *LEUCOBRYUM BONINENSE* (sp. nov.): dioicum, subgracile; foliis lineari-lanceolatis strictiusculis superne convolutis apice serratis dorso lævibus, perichætialibus interioribus longe vaginantibus subito attenuatis; capsula obovato-oblonga strumosa; pedicello breviusculo: floribus masculis aggregatis.

Bonin Islands.

10. *MACROMITRIUM INSULARUM* (sp. nov.): dioicum, compacte caespitans; ramis brevissimis densifoliis; foliis ligulatis acutis erecto-incurvis apice involutis, cellulis inferne lineari-oblongis subpellucidis superne rotundatis minutis carnosulis papillois, costa cum apice desinente; capsula ovali microstoma brevipedicellata; operculo recte rostrato; calyptra mitriformi pilosissima.

On trees, Loo Choo Islands, Ousima; also Simoda, &c., Japan.

11. *MACROMITRIUM GYMNSTOMUM* (sp. nov.): dioicum, tenellum, dense deplanato-caespitans; ramis brevissimis incrassatis; foliis ligulatis acuminatis strictis erecto-patentibus inferne oblongo- superne minute rotundato-areolatis papillois, costa sub apice evanida; capsula oblongo-

+ 8. *Mnium flagellare* - Lindberg sends me (1872) fruiting specimens of this, collected at "Sachylin, Kuss-unai" [where is that?] - He makes a new genus *Trachycystis* & calls it *Tra. flagellaris* (S. & L.) Lindb. He sends also specimens of *Tra. microphylla* (D. & M.)

ovali striata gymnostoma; operculo e basi depressa oblique aciculari-rostrato; calyptra cuculliformi plicata pilosa.

On rocks and trees, Simoda, Japan; and Ousima, one of the northern Loo Choo Islands.

12. *POGONATUM JAPONICUM* (sp. nov.): elatum; caule simplici sub perichætio innovante inferne aphylo; foliis confertis siccitate circinato-tortilibus humidis patentissimis lineari-lanceolatis spinuloso-serratis brevius lamellosis; capsula cylindracea erecta subcurvula papillosa brevipedicellata.

Mountains northeast of Hakodadi, Japan.

13. *BRYUM HUMIDULUM* (sp. nov.): dioicum, innovationibus gracilibus ramosum; foliis oblongo-lanceolatis sensim attenuatis costa excedente aristatis lineari-rhomboideo-areolatis superne denticulatis margine revolutis; capsula pendula elongata cylindraceo-clavata curvula late annulata; operculo magno hemisphærico papillato; peristomio normali.

Moist places among mountains, near Simon's Town, Cape of Good Hope.

14. *BRYUM CRUDOIDES* (sp. nov.): dioicum; caule simplici; foliis ascendendo majoribus, inferioribus lanceolatis, comalibus erecto-patentibus lineari-lanceolatis acuminatis apice denticulatis areolatione lineari, costa valida evanida; capsula suberecta oblongo-elliptica brevicolla microstoma; peristomio *B. polymorphi*: flore masc. capituliformi.

Behring's Straits.

15. *BRYUM WRIGHTII* (sp. nov.): monoicum vel synoicum, dense cæspitans, pusillum; caulibus ramisque perbrevis; foliis gemmaceo-imbricatis, comalibus lanceolatis longe acuminatis costa cuspidatis superne denticulatis laxius oblongo-areolatis marginibus anguste revolutis; capsula pendula globoso-pyriformi microstoma annulata; perist. intern. ciliis linearibus perforatis, ciliolis subnullis; operculo depresso-conico.

Arakamchetchene Island, Behring's Straits.

16. *BRYUM MEGALODICTYON* (sp. nov.): dioicum, pusillum; foliis erectis superne congestis oblongo-ovatis acutis concavis evanido-costatis, cellulis hexagono-oblongis amplissimis; capsula suberecta oblongo-pyriformi annulata; ciliis perist. intern. linearibus ciliolis nullis; operculo hemisphærico-conico papillato.

"On walls at the Capitol," Loo Choo Islands.



17. *BARTRAMIA INSERTA* (sp. nov.): dioica, exigua, dense cæspitosa, luteo-viridis; foliis suberectis lineari-lanceolatis attenuatis sparse papillois toto ambitu serratis marginibus recurvis, costa subpercurrente; capsula erecta globosa sulcata gymnostoma; operculo convexo minute conico.

On damp vertical rocks among hills, near Simon's Town, Cape of Good Hope.

18. *HYPNUM ASSURGENS* (sp. nov.): dioicum, homophyllum; caule arcuato-assurgente subpinnato-ramuloso eparaphylloso; foliis erecto-incurvis apertis e basi lata cordato-ovata lineari-lanceolatis papillois apice serrulatis marginibus revolutis cellulis guttulatis opacis, costa pellucida sub apice evanida; capsula gibboso-oblonga cernua annulata; pedicello tuberculoso; operculo longirostrato; peristomio normali.

On decayed logs, shady hill-sides, Ousima, Loo Choo Islands.

19. *HYPNUM DISPERSUM* (sp. nov.): monoicum; caule prostrato diviso pinnato-ramuloso paraphylloso; foliis patentibus e basi late ovata subito lanceolato-attenuatis serrulatis papillois, costa (præcipue in perichætalibus) valida sub apice evanida; capsula oblonga vel cylindracea curvula horizontali annulata; operculo convexo-conico obtuso.

On dry ground, shaded hill-sides, Simoda, Japan; and Loo Choo.

20. *HYPNUM OBLONGIFOLIUM* (sp. nov.): monoicum, prostratum, subpinnatum; caulibus ramisque laxius compresso-foliosis; foliis e basi brevissima convoluto-angustata oblongis acutis apice serratis lineari-areolatis; capsula (an normali?) gibboso-ovali inclinata; operculo convexo-conico apiculato; peristomio hypnoideo.

Hong Kong, China.

21. *HYPNUM SIMODENSE* (sp. nov.): dioicum, vage et subpinnatim ramosum; foliis confertis concavis ovato-ellipticis subito longe filiformi-acuminatis elongato-areolatis margine recurvis, costa supra medium evanescente; capsula oblongo-ovali subæquali plagiostoma erectiuscula; operculo conico brevirostro; peristomio *H. læti*.

Simoda, Japan.

22. *HYPNUM MACROSTEGIUM* (sp. nov.): dioicum; subfastigiato-ramosum; foliis confertis e basi oblongo-ovata sensim longe acuminatis plicato-striatis serratis elongato-areolatis margine basilari recurvis, costa subpercurrente; capsula cylindraceo-ovali erecta annulata; int. perist. ciliolis subnullis; operculo conico longe rostrato.

Steep banks, among hills, near Simoda, Japan.

23. *HYPNUM FLACCIDUM* (sp. nov.): monoicum, prostratum, subpinnatim ramosum, laxe foliosum; foliis subbifariis horizontalibus ovato-lanceolatis sensim filiformi-acuminatis ecostatis integerrimis laxissime oblongo-areolatis; capsula oblonga vix curvula longicolla horizontali; operculo breviconico obtusato.

On banks, shaded hill-sides, Simoda, Japan.

24. *HYPNUM SPINULOSUM* (sp. nov.): monoicum, irregulariter subpinnatimve ramosum, arctius deplanato-foliosum; foliis divergentibus ovato-lanceolatis setiformi-attenuatis ecostatis toto ambitu serratis densius elongato-areolatis; capsula obovato-oblonga basi attenuata curvula horizontali.

Simoda, Japan.

25. *HYPNUM THELIDICTYON* (sp. nov.): monoicum, vage subfastigiato-ramosum; caulibus ramisque assurgentibus compressis; foliis laxis e basi constricta oblongis sensim longius acuminatis concavis ecostatis toto margine serratis, cellulis elongatis grosse unipapillatis, alaribus utrinque 3–4 amplissimis vesiculiformibus; capsula minuta in pedicello lævi oblonga subpendula; operculo longissime aciculari-rostrato.

Hill-sides, Ousima: rocks in ravines, Hong Kong, China.

26. *HYPNUM POHLIÆCARPUM* (sp. nov.): dioicum, prostratum, parce ramosum; foliis bifariam complanatis ovato-lanceolatis brevius recte vel oblique acuminatis apice grosse serratis, cellulis linearibus, costellis binis brevissimis; capsula cylindracea longicolla vix incurva subpendula; operculo conico brevirostrato.

On steep shaded banks, Simoda, Japan.

27. *HYPNUM ERECTIUSCULUM* (sp. nov.): dioicum, subprostratum; caule vage diviso ramuloso compresso; foliis deorsum falcatis late ovato-lanceolatis acuminatis apice serrulatis dense lineari-areolatis, costellis subnullis; capsula gracili cylindracea erectiuscula annulata; operculo conico obtuso.

Hakodadi, Japan.

28. *HYPNUM RODGERSIANUM* (sp. nov.): dioicum, majusculum; caule assurgente simplici vel semel diviso regulariter pinnato-ramuloso; foliis oblongo-lanceolatis acuminatis deorsum falcatis serrulatis ecostatis tenui-areolatis; capsula oblonga breviuscula turgida gibboso-incurva, sicca estriata; operculo obtuse conico.



On the ground, shady mountain sides, Katonasima, between the proper Loo Choo group and Japan.

29. *HYPNUM EXIMIUM* (sp. nov.): monoicum, exiguum, prostratum, pinnato-ramulosum; foliis laxis bifariis oblongis ovato-oblongisve acutis ecostatis superne serratis laxius elongato-areolatis; capsula gibboso-oblonga turgida incurva subhorizontali annulata; operculo convexo-conico.

On decayed wood, mountain-sides, Bonin Islands.

30. *HYPNUM SUBALBIDUM* (sp. nov.): monoicum, exiguum, prostratum, vage subpinnatim ramulosum; foliis compressis divergentibus oblongo-lanceolatis tenuiter acuminatis integerrimis ecostatis lineari-areolatis; capsula subovali vix curvula horizontali exannulata; operculo conico brevirostrato.

On damp decayed wood, Simoda, Japan; also Bonin Islands.

31. *HYPNUM SMALLII* (sp. nov.): dioicum, exiguum; caule prostrato subpinnatim ramuloso; foliis subcompressis imbricatis erecto-patentibus lanceolatis longe acuminatis ecostatis obsolete serrulatis, cellulis compactis angustissimis; capsula elongato-elliptico-oblonga horizontali pendulave; operculo conico rostrato.

On decayed logs, shaded hill-sides, Ousima; also Bonin Islands.

32. *HYPNUM OMETEPENSE* (sp. nov.): monoicum, laxe cæspitosum; caule tenui repente; ramis arcuato-erectis fasciculato-ramulosis; foliis lanceolatis acuminatis patentibus superne serratis, cellulis linearibus, costellis binis brevissimis; capsula in pedicello elongato obovato-oblonga macrostoma subpendula; operculo e basi conica tenuiter brevi-rostrato.

On bushes, summit of a mountain on the Island of Ometepe, in Lake Nicaragua.

33. *HOOKERIA WRIGHTII* (sp. nov.): dioicum, majusculum, prostratum, dense pinnatim ramulosum, subcompressis foliosum; foliis oblongo-ovalibus subito in acumen longum tenue flexuosum productis, marginibus infra acumen convolutis, cellulis angustissime linearibus, costis binis ad medium evanidis; capsula oblonga inæquali macrostoma inclinata; peristomio normali eciliolato; operculo convexo-conico recte rostrato; calyptra e basi mitriformi multifida longe rostrata.

Growing with *Hypnum Ometepense*.

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